



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) **EP 0 744 814 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**24.02.1999 Bulletin 1999/08**

(51) Int. Cl.<sup>6</sup>: **H02K 37/00, H02K 23/36**

(43) Date of publication A2:  
**27.11.1996 Bulletin 1996/48**

(21) Application number: **96201162.3**

(22) Date of filing: **29.04.1996**

(84) Designated Contracting States:  
**DE FR GB**

(30) Priority: **24.05.1995 US 449313**

(71) Applicant:  
**GENERAL MOTORS CORPORATION**  
**Detroit Michigan 48202 (US)**

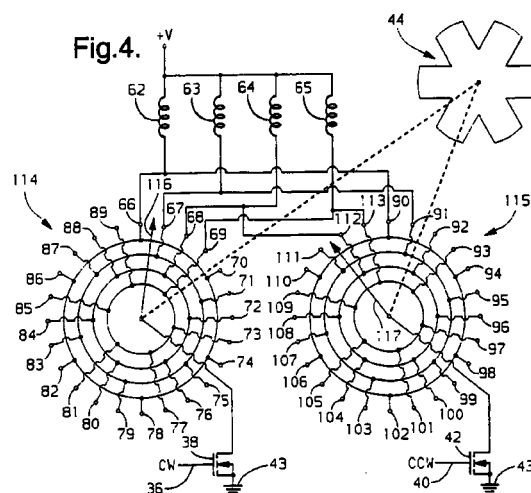
(72) Inventors:  
• **Fulks, Gary Chris**  
**Spring Valley, Ohio 45458 (US)**

• **Dimatteo, Michael Anthony**  
**Kettering, Ohio 45440-1812 (US)**

(74) Representative:  
**Denton, Michael John et al**  
**Delphi Automotive Systems**  
**Centre Technique Paris**  
**117 avenue des Nations**  
**B.P. 60059**  
**95972 Roissy Charles de Gaulle Cedex (FR)**

(54) **Switched reluctance motor**

(57) A switched reluctance motor comprising: a stator (46) including a plurality of phase coils (62-5); a rotor (44) rotatably mounted coaxially with the stator; a first commutator plate (144) comprising a plurality of first contact plates (66-89) wherein each phase coil of the plurality of phase coils is electrically coupled to a separate one of the plurality of first contact plates; a first switching device (38); a first rotatably mounted brush (116) consecutively providing electrical contact between each first contact plate and the first switching device; a second switching device (40); a second commutator plate (115) comprising a plurality of second contact plates (90-113) wherein each phase coil of the plurality of phase coils is electrically coupled to a separate one of the plurality of second contact plates; a second rotatably mounted brush (117) consecutively providing electrical contact between each second contact plate and the second switching device, wherein, when the first switching device is closed and the second switching device is open, the rotor rotates in a first direction and wherein, when the second switching device is closed and the first switching device is open, the rotor rotates in a second direction opposite to the first direction.



**EP 0 744 814 A3**

European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 96201162.3
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 6)
A	Patent Abstracts of Japan, Vol. 18, No. 88 (E-1507), 1994; & JP 05-292719 A (JAPAN STEEL WORKS LTD.) 05 November 1993. --	1	H 02 K 37/00 H 02 K 23/36
A	EP 0309076 A2 (JOHNSON ELECTRIC) 29 March 1989 (29.03.89), totality. -----	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 6)
			H 02 K H 02 P
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 30-11-1998	Examiner SCHLECHTER
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03/82 (P0601)